

REMARKS

In the non-final Office Action, the Examiner noted that claims 1-21 are pending in the application and that claims 1-21 stand rejected. By this response, claims 1-21 continue unamended.

In view of the following discussion, the Applicants submit that none of the claims now pending in the application are obvious under the provisions of 35 U.S.C. §103. Thus, the Applicants believe that all of these claims are now in allowable form.

In the Drawings:

The applicant has amended FIG. 1 to conform to the text of the Specification. In particular, "Local Server" has been changed to "Local DN Server" and the associated reference number "54" has been amended to "58" to avoid confusion with the content servers, which are also enumerated as 54a-54e.

Applicant has enclosed the proposed drawing corrections (shown in red ink) on the replacement sheet along with the response to this Office Action, and the applicant submits that such added reference designations to FIG. 1 does not add any new subject matter. Upon acceptance of these changes, the applicant will submit the formal drawings.

In the Specification:

The Applicant has amended the specification to provide minor grammatical corrections and change reference designations to conform to the reference designations in the drawings. Further, the applicant has deleted Table III.b on page 22 of the specification because the contents of Table III.b are inapplicable to the present application. Accordingly, Tables III.c through III.e on pages 22 and 23 in the specification have been renumbered to Tables III.b through III.d. That is, by this amendment Tables III.a to III.e are now Tables III.1 to III.d. The Applicants submit that such grammatical corrections or reference designation changes do not add any new subject matter to the application.

REJECTIONS

35 U.S.C. §103

Claims 1-21

The Examiner has rejected claims 1-21 under 35 U.S.C. §103(a) as being unpatentable over Jindal et al. (U.S. Patent No. 6,092,178, hereinafter "Jindal") in view of Narendran et al. (U.S. Patent No. 6,070,191, hereinafter "Narendral"). Applicants respectfully traverse the rejection.

Independent claim 1 (and similarly, independent claim 16) recites:

"A method for determining at least one best-performing content server in response to a request in a network including a plurality of content servers, at least one redirection server, and a plurality of clients, the method comprising the steps of:

creating a plurality of client clusters, wherein each of said plurality of client clusters includes one or more clients having similar network distance properties;

identifying said at least one best-performing content server for each of said plurality of client clusters by determining network distances between each of said plurality of client clusters and each of said plurality of content servers and selecting at least one content server for each of said plurality of client clusters having a minimum network distance there-between; and

mapping each of said plurality of client clusters to a corresponding said at least one identified best-performing content server." (emphasis added).

The test under 35 U.S.C. § 103 is not whether an improvement or a use set forth in a patent would have been obvious or non-obvious; rather the test is whether the claimed invention, considered as a whole, would have been obvious. Jones v. Hardy, 110 USPQ 1021, 1024 (Fed. Cir. 1984) (emphasis added). Thus, it is impermissible to focus either on the "gist" or "core" of the invention, Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc., 230 USPQ 416, 420 (Fed. Cir. 1986) (emphasis added). Moreover, the invention as a whole is not restricted to the specific subject matter claimed, but also embraces its properties and the problem it solves. In re Wright, 6 USPQ 2d 1959, 1961 (Fed. Cir. 1988) (emphasis added). The combination of Jindal and Narendral fail to teach or suggest the Applicants' invention as a whole.

In particular, Jindal discloses "client 120 may be a personal computer or workstation configured to provide a user access to a network (e.g., the Internet) and various applications and services on servers 110, 112, and 114. Client 120 is thus coupled to DNS 100 via network 122, and includes instructions (e.g., web browser) for communicating via network 122." (see Jindal, col. 6, lines 18-27).

Nowhere in the Jindal reference is there any teaching or suggestion of "creating a plurality of client clusters, wherein each of said plurality of client clusters includes one or more clients having similar network distance properties." The objective of the clustering operation is to partition the total IP address space into smaller clusters or groups where each cluster is defined by a particular CIDR address prefix. Each cluster is made up of clients having IP address prefixes which match the CIDR address prefix of the cluster. In addition to creating client clusters, the clustering operation also provides an estimate of the mean network distance from clients in each client cluster to each content server 54a-e in the network. (see Applicants' specification, page 17, lines 7-12).

This is completely different from the Jindal reference, since the clients associated with the local DNS server are already associated with a single location. By illustration, the Jindal reference operates in a network environment having a local DNS server (e.g., at the PTO) associated with a single group of clients (e.g., the people working at the PTO). This local DNS server of the PTO is associated with these specific clients, and directs client requests for content to a host server (e.g., CNN.com) storing such content. In other words, the Jindal reference operates at a local network level, where the clients in the local network all have the same IP address prefix (e.g., 134.104. x.x).

By contrast, the applicants' invention operates differently, where the DNS server is associated with the network supporting the content server (e.g., CNN.com), as opposed to the client network. The DNS server of the Applicants' invention first creates a plurality of client clusters, since it receives content requests from a diversity of clients that are associated with different networks (e.g., around the world) having different IP address prefixes. For example, clients from various IP addresses (e.g., 135.104.x.x, 101.12.x.x, 170.151.x.x, 204.178.x.x, among many others) as illustratively shown in

Table II of Applicants' specification (page 21), may request content from CNN.com. The DNS server located proximate the content network creates clusters of clients based on their IP addresses. Therefore, the Jindal reference fails to teach or suggest "creating a plurality of cluster clients."

Furthermore, the Jindal reference fails to teach or suggest "determining network distances between each of said plurality of client clusters and each of said plurality of content servers." Rather, the Jindal reference merely discloses determining distances between the local DNS server and the content server (see Jindal, col. 9, lines 43-56). By contrast, the distance between the Applicant's DNS server and the content server is irrelevant, since they are usually proximately located. Rather, the Applicant's invention determines network distances between each of said plurality of client clusters and each of said plurality of content servers. Therefore, since the Jindal reference fails to teach or suggest (i) creating a plurality of client clusters, and (ii) determining network distances between each of said plurality of client clusters and each of said plurality of content servers, the Jindal reference fails to teach or suggest the applicant's invention as a whole.

Furthermore, the Narendran reference fails to bridge the substantial gap as between the Jindal reference and the Applicants' invention. In particular, Narendran discloses a server system for processing client requests received over a communication network including a cluster of N document servers and at least one redirection server. The redirection server receives a client request from the network and redirects it to one of the document servers, based on a set of pre-computed redirection probabilities. A DNS server maps a domain name in a client request to an IP address of the appropriate server in the system (see Narendran, Abstract and col. 4, lines 10-16).

Even if the two references could somehow be operably combined, the combination would merely disclose a local DNS server that determines distance between itself and content servers based on a pre-computed probabilities. Nowhere in the combined references is there any teaching or suggestion of "creating a plurality of client clusters, wherein each of said plurality of client clusters includes one or more clients having similar network distance properties" and "determining network distances between each of said plurality of client clusters and each of said plurality of content

servers.” Therefore, the two references, either singularly or in combination, fail to teach or suggest the Applicants’ invention as a whole.

As such, the applicants submit that independent claims 1 and 16 are not obvious and fully satisfy the requirements under 35 U.S.C. § 103 and are patentable thereunder. Furthermore, claims 2-15 and 17-21 depend, either directly or indirectly, from independent claims 1 and 16, and recite additional features thereof. As such, and for at least the same reasons discussed above, the applicants submit that these dependent claims also fully satisfy the requirements under 35 U.S.C. § 103 and are patentable thereunder. Therefore, the applicants respectfully request that the rejection be withdrawn.



CONCLUSION

Thus, the Applicants submit that claims 1-21 are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Eamon J. Wall or Steven M. Hertzberg at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

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Technology Center 2100

Respectfully submitted,

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